

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

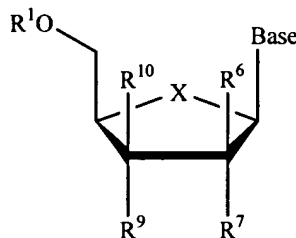
**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claims 1-88 (canceled)

Claims 89 (currently amended): A method for the treatment ~~or prophylaxis~~ of a hepatitis C virus infection in a host, comprising administering an anti-virally effective amount of a compound of Formula XVII:



or a pharmaceutically acceptable salt or ester thereof, wherein:

Base is a purine ~~or pyrimidine base as defined herein~~;

R¹ and R² are independently H; phosphate ~~(including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug); a stabilized phosphate prodrug~~; acyl ~~(including lower acyl)~~; alkyl ~~(including lower alkyl)~~; sulfonate ester ~~including alkyl or arylalkyl sulfonyl including methanesulfonyl and~~; benzyl, wherein the phenyl group is optionally substituted with one or more substituents ~~as described in the definition of aryl given herein~~; a lipid; ~~including a phospholipid~~; an amino acid; a carbohydrate; a peptide; a cholesterol; or other pharmaceutically acceptable leaving group which when administered *in vivo* is capable of providing a compound wherein R¹ and R² are independently H or phosphate;

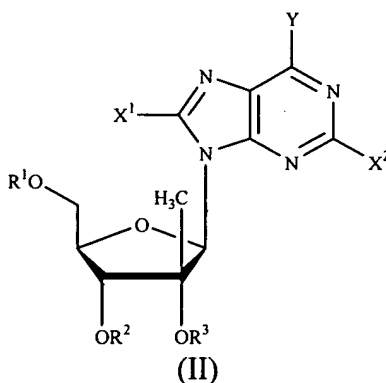
R⁶ is ~~hydrogen~~, hydroxy, alkyl ~~(including lower alkyl)~~, azido, cyano, alkenyl, alkynyl, Br-vinyl, -C(O)O(alkyl), -C(O)O(lower alkyl), -O(acyl), -O(lower acyl), -O(alkyl), -O(lower alkyl), -O(alkenyl), chloro, bromo, fluoro, iodo, NO₂, NH₂, -NH(lower alkyl), -NH(acyl), -N(lower alkyl)₂, or -N(acyl)₂;

R^7 and R^9 are independently hydrogen, OR^2 , hydroxy, alkyl (~~including lower alkyl~~), azido, cyano, alkenyl, alkynyl, Br-vinyl, $-C(O)O(alkyl)$, $-C(O)O(lower\ alkyl)$, $-O(acyl)$, $-O(lower\ acyl)$, $-O(alkyl)$, $-O(lower\ alkyl)$, $-O(alkenyl)$, chlorine, bromine, iodine, NO_2 , NH_2 , $-NH(lower\ alkyl)$, $-NH(acyl)$, $-N(lower\ alkyl)_2$, or $-N(acyl)_2$;

R^{10} is H, alkyl (~~including lower alkyl~~), chlorine, bromine or iodine;
alternatively, R^7 and R^9 , or R^7 and R^{10} can come together to form a bond; and
 X is O, S, SO_2 or CH_2 .

Claims 90-129 (canceled)

Claim 130 (new): The method of claim 89 for the treatment of a hepatitis C virus infection in a host, comprising administering an anti-virally effective amount of a compound of Formula II:



or a pharmaceutically acceptable salt or ester thereof, wherein:

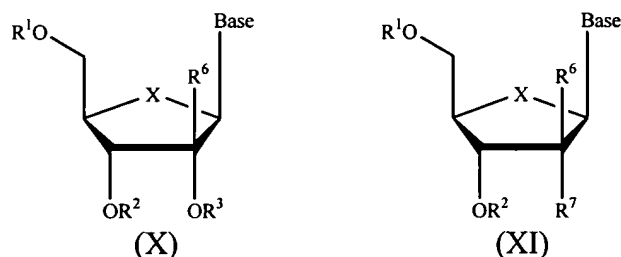
R^1 , R^2 and R^3 are independently H; phosphate or a stabilized phosphate prodrug; acyl; alkyl; sulfonate ester; or benzyl, wherein the phenyl group is optionally substituted with one or more substituents; a lipid; an amino acid; a carbohydrate; a peptide; cholesterol; or other pharmaceutically acceptable leaving group which when administered *in vivo* is capable of providing a compound wherein R^1 , R^2 and R^3 are independently H or phosphate; and

Y is hydrogen, bromo, chloro, fluoro, iodo, OR^4 , NR^4R^5 or SR^4 ;

X^1 and X^2 are independently selected from the group consisting of H, straight chained, branched or cyclic alkyl, CO-alkyl, CO-aryl, CO-alkoxyalkyl, chloro, bromo, fluoro, iodo, OR^4 , NR^4NR^5 or SR^4 ; and

R^4 and R^5 are independently hydrogen, acyl, or alkyl.

Claim 131 (new): The method of claim 89 for the treatment of a hepatitis C virus infection in a host, comprising administering an anti-virally effective amount of a compound of Formula X or XI:



or a pharmaceutically acceptable salt or ester thereof, wherein:

Base is a purine;

R^1 , R^2 and R^3 are independently H; phosphate or a stabilized phosphate prodrug; acyl; alkyl; sulfonate ester; or benzyl, wherein the phenyl group is optionally substituted; a lipid; an amino acid; a carbohydrate; a peptide; cholesterol; or other pharmaceutically acceptable leaving group which when administered *in vivo* is capable of providing a compound wherein R^1 , R^2 and R^3 are independently H or phosphate;

R^6 is hydroxy, alkyl, azido, cyano, alkenyl, alkynyl, Br-vinyl, $-C(O)O(alkyl)$, $-C(O)O(lower\ alkyl)$, $-O(acyl)$, $-O(lower\ acyl)$, $-O(alkyl)$, $-O(lower\ alkyl)$, $-O(alkenyl)$, chloro, bromo, fluoro, iodo, NO_2 , NH_2 , $-NH(lower\ alkyl)$, $-NH(acyl)$, $-N(lower\ alkyl)_2$, or $-N(acyl)_2$;

R^7 is hydrogen, OR^3 , hydroxy, alkyl, azido, cyano, alkenyl, alkynyl, Br-vinyl, $-C(O)O(alkyl)$, $-C(O)O(lower\ alkyl)$, $-O(acyl)$, $-O(lower\ acyl)$, $-O(alkyl)$, $-O(lower\ alkyl)$, $-O(alkenyl)$, chlorine, bromine, iodine, NO_2 , NH_2 , $-NH(lower\ alkyl)$, $-NH(acyl)$, $-N(lower\ alkyl)_2$, or $-N(acyl)_2$; and

X is O, S, SO_2 or CH_2 .

Claim 132 (new): The method of claim 89 for the treatment of a hepatitis C virus infection in a host, wherein, in the compound of Formula XVII:

R^{10} is H, alkyl, chlorine, bromine or iodine;

R^7 and R^9 are independently hydrogen, OR^2 , alkyl, alkenyl, alkynyl, Br-vinyl, O-alkenyl, chlorine, bromine, iodine, NO_2 , NH_2 , -NH(lower alkyl), -NH(acyl), -N(lower alkyl)₂, or -N(acyl)₂;

R^6 is alkyl, chlorine, bromine or iodine;

alternatively, R^7 and R^9 , or R^8 and R^9 can come together to form a bond; and

X is O, S, SO_2 or CH_2 .

Claim 133 (new): The method of claim 89 wherein R^1 is hydrogen or phosphate.

Claim 134 (new): The method of claim 89 wherein R^2 is hydrogen, acyl or alkyl.

Claim 135 (new): The method of claim 89 wherein R^6 is alkyl.

Claim 136 (new): The method of claim 89 wherein R^7 and R^9 are independently hydrogen, OR^2 , or hydroxy.

Claim 137 (new): The method of claim 89 wherein R^7 is hydroxy.

Claim 138 (new): The method of claim 89 wherein R^9 is hydroxy.

Claim 139 (new): The method of claim 89 wherein R^7 and R^9 are hydroxy.

Claim 140 (new): The method of claim 89 wherein R^{10} is hydrogen.

Claim 141 (new): The method of claim 89 wherein X is O.

Claim 142 (new): The method of claim 89 wherein

R^1 is hydrogen or phosphate;

R^2 is hydrogen, acyl or alkyl;

R^6 is alkyl;

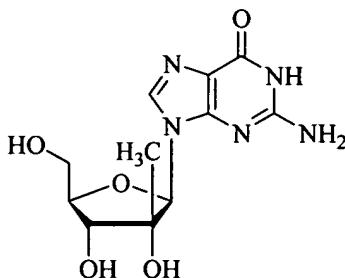
R^7 and R^9 are independently hydrogen, OR^2 , or hydroxy;

R^{10} is hydrogen; and

X is O.

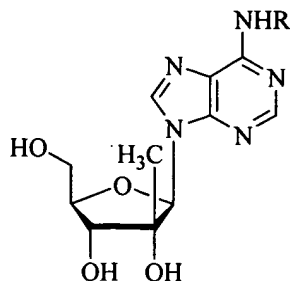
Claim 143 (new): The method of claim 89, wherein the base is a purine selected from the group consisting of N^6 -alkylpurines, N^6 -acylpurines (wherein acyl is $C(O)(\text{alkyl}, \text{aryl}, \text{alkylaryl}, \text{or arylalkyl})$), N^6 -benzylpurine, N^6 -halopurine, N^6 -vinylpurine, N^6 -acetylenic purine, N^6 -acyl purine, N^6 -hydroxyalkyl purine, N^6 -thioalkyl purine, N^2 -alkylpurines, N^2 -alkyl-6-thiopurines, N^2 -alkylpurines, N^2 -alkyl-6-thiopurines, 5-azacytidinyl, guanine, adenine, hypoxanthine, 2,6-diaminopurine, and 6-chloropurine.

Claim 144 (new): The method of claim 89 for the treatment of a hepatitis C virus infection in a host, comprising administering an antivirally effective amount of a compound of the structure:



or a pharmaceutically acceptable salt or ester thereof.

Claim 145 (new): The method of claim 89 for the treatment of a hepatitis c virus infection in a host, comprising administering an antivirally effective amount of a compound of the structure:

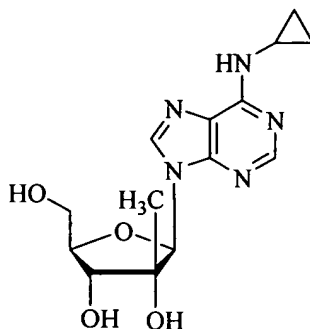


or a pharmaceutically acceptable salt or ester thereof, wherein R is hydrogen or alkyl.

Claim 146 (new): The method of claim 196, wherein R is methyl, ethyl, propyl, isopropyl, or cyclopropyl.

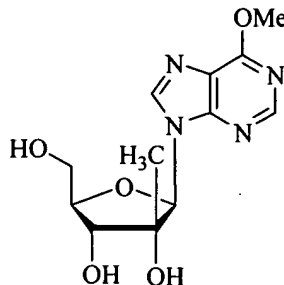
Claim 147 (new): The method of claim 196, wherein R is butyl, isobutyl, *t*-butyl, pentyl, cyclopentyl, isopentyl, or neopentyl.

Claim 148 (new): The method of claim 89 for the treatment of a hepatitis C virus infection in a host, comprising administering an antivirally effective amount of a compound of the structure:



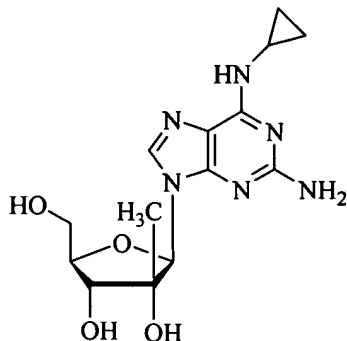
or a pharmaceutically acceptable salt or ester thereof.

Claim 149 (new): The method of claim 89 for the treatment of a hepatitis C virus infection in a host, comprising administering an antivirally effective amount of a compound of the structure:



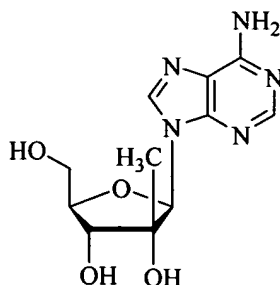
or a pharmaceutically acceptable salt or ester thereof.

Claim 150 (new): The method of claim 89 for the treatment of a hepatitis C virus infection in a host, comprising administering an antivirally effective amount of a compound of the structure:



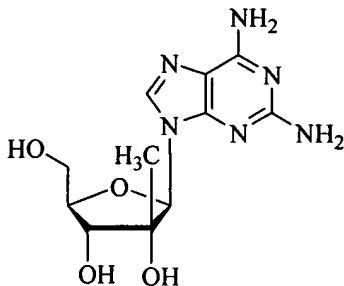
or a pharmaceutically acceptable salt or ester thereof.

Claim 151 (new): The method of claim 89 for the treatment of a hepatitis C virus infection in a host, comprising administering an antivirally effective amount of a compound of the structure:



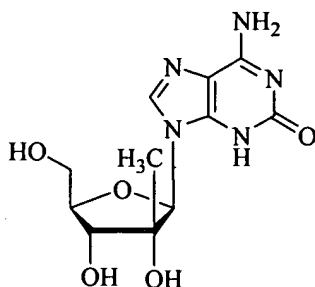
or a pharmaceutically acceptable salt or ester thereof.

Claim 152 (new): The method of claim 89 for the treatment of a hepatitis C virus infection in a host, comprising administering an antivirally effective amount of a compound of the structure:



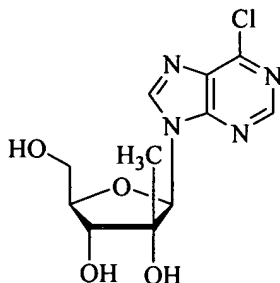
or a pharmaceutically acceptable salt or ester thereof.

Claim 153 (new): The method of claim 89 for the treatment of a hepatitis C virus infection in a host, comprising administering an antivirally effective amount of a compound of the structure:



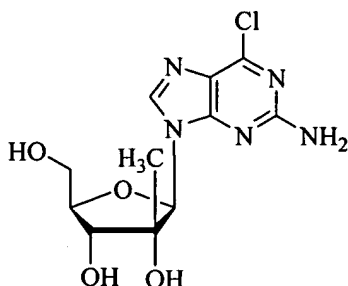
or a pharmaceutically acceptable salt or ester thereof.

Claim 154 (new): The method of claim 89 for the treatment of a hepatitis C virus infection in a host, comprising administering an antivirally effective amount of a compound of the structure:



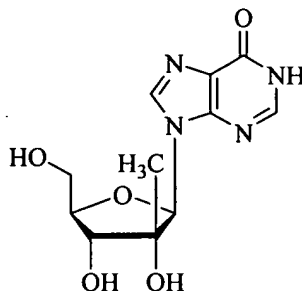
or a pharmaceutically acceptable salt or ester thereof.

Claim 155 (new): The method of claim 89 for the treatment of a hepatitis C virus infection in a host, comprising administering an antivirally effective amount of a compound of the structure:



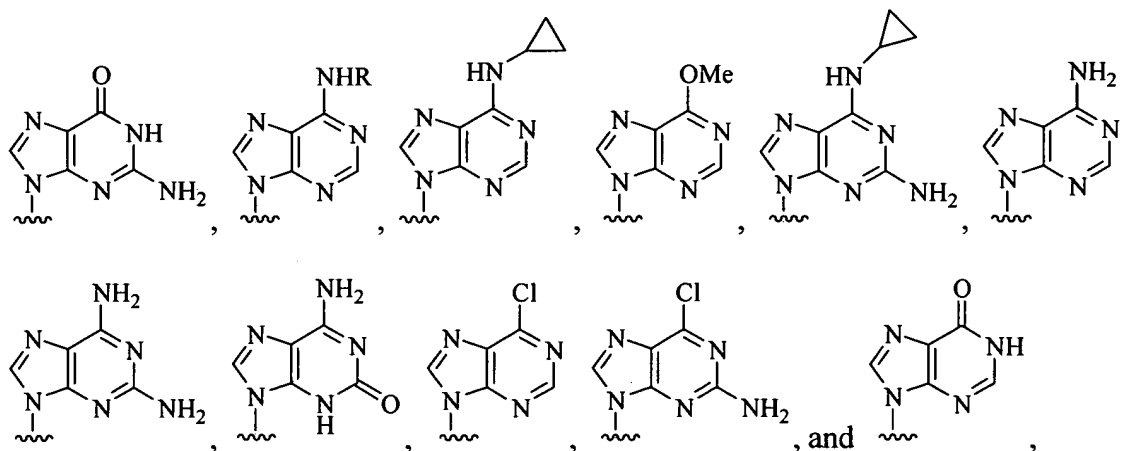
or a pharmaceutically acceptable salt or ester thereof.

Claim 156 (new): The method of claim 89 for the treatment of a hepatitis C virus infection in a host, comprising administering an antivirally effective amount of a compound of the structure:



or a pharmaceutically acceptable salt or ester thereof.

Claim 157 (new): The method of claim 89 for the treatment of a hepatitis C virus infection in a host, wherein the purine base is selected from the group consisting of



wherein R

is methyl, ethyl, propyl, isopropyl, butyl, isobutyl, *t*-butyl, pentyl, cyclopentyl, isopentyl, or neopentyl.

Claim 158 (new): The method of claim 89, wherein the method comprises administering the compound or a pharmaceutically acceptable salt or ester thereof in combination or alternation with a second anti-hepatitis C virus agent.

Claim 159 (new): The method of claim 158, wherein the second anti-hepatitis C virus agent is selected from the group consisting of consisting of interferon, ribavirin, a protease inhibitor, a thiazolidine derivative, a polymerase inhibitor, and a helicase inhibitor.

Claim 160 (new): The method of claim 159, wherein the second anti-hepatitis C virus agent is interferon.

Claim 161 (new): The method of claim 159, wherein the second anti-hepatitis C virus agent is a protease inhibitor.

Claim 162 (new): The method of claim 159, wherein the second anti-hepatitis C virus agent is ribavirin.

Claim 163 (new): The method of claim 89, wherein the compound is in the form of a dosage unit.

Claim 164 (new): The method of claim 163, wherein the dosage unit contains 50 to 1000 mg of said compound.

Claim 165 (new): The method of claim 163, wherein said dosage unit is a tablet or capsule.

Claim 166 (new): The method of claim 89, wherein the host is a human.

Claim 167 (new): The method of claim 89, wherein the compound is in substantially pure form.

Claim 168 (new): The method of claim 89, wherein the compound is at least 90% by weight of the β -D-isomer.

Claim 169 (new): The method of claim 89, wherein the compound is at least 95% by weight of the β -D-isomer.